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of

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Application Number

Unassigned 09/825242

Filing Date

April 2, 2001

First Named Inventor

Eisenberg, Stephen

Group Art Unit

1631

Examiner Name

~~Jeffrey Lundgren~~ John S. Brusca

Attorney Docket Number

019496-001810

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	AA	6,013,453		Choo et al.	1/11/2000	
	AB	6,007,988		Choo et al.	12/28/99	
	AC	6,001,885		Vega et al.	12/14/99	
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		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	BJ		EP 875 567		EUROPE	11/4/98		
	BK		WO 00/27878		PCT	5/18/2000		
	BL		WO 99/48909		PCT	9/30/99		
	BM		WO 99/47656		PCT	9/23/99		
	BN		WO 99/45132		PCT	9/10/99		
	BO		WO 99/42474		PCT	8/26/99		
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	BQ		WO 99/36553		PCT	7/22/99		
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	BW		WO 97/27213		PCT	7/31/97		
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<i>JB</i>	CC		WO 96/06110		PCT	2/29/96		
<i>JB</i>	CD		WO 95/19431		PCT	7/25/95		

Examiner Signature	<i>J.B. Buser</i>	Date Considered	<i>12 September 2003</i>
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Applicati n Numb r	Unassigned 09/825 242
Filing Dat	April 2, 2001
First Named Inventor	Eisenberg, Stephen
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Examiner Name	Jeffrey Lundgren John S. Brusca
Attorney Docket Number	019496-001810

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
	CE	Agarwal et al., "Stimulation of Transcript Elongation Requires both the Zinc Finger and RNA Polymerase II Binding Domains of Human TFIIS," <u>Biochemistry</u> , 30(31):7842-7851 (1991).	
	CF	Anato et al., "A thermodynamic study of unusually stable RNA and DNA hairpins," <u>Nuc. Acids. Res.</u> , 19(21):5901-5905 (1991).	
	CG	Barbas, C. F., "Recent advances in phage display," <u>Curr. Opin. Biotech.</u> , 4:526-530 (1993).	
	CH	Barbas et al., "Assembly of combinatorial antibody libraries on phage surfaces: The gene III site," <u>PNAS</u> , 88:7978-7982 (1991).	
	CI	Barbas et al., "Semisynthetic combinatorial antibody libraries: A chemical solution to the diversity problem," <u>PNAS</u> , 89:4457-4461 (1992).	
	CJ	Beerli et al., "Toward controlling gene expression at will: Specific regulation of the <i>erbB-2/HER-2</i> promoter by using polydactyl zinc finger proteins constructed from modular building blocks," <u>PNAS</u> , 95:14628-14633 (1998).	
	CK	Bellefroid et al., "Clustered organization of homologous KRAB zinc-finger genes with enhanced expression in human T lymphoid cells," <u>EMBO J.</u> , 12(4):1363-1374 (1993).	
	CL	Berg, J. M., "DNA Binding Specificity of Steriod Receptors," <u>Cell</u> , 57:1065-1068 (1989).	
	CM	Berg, J. M., "Sp1 and the subfamily of zinc finger proteins with guanine-rich binding sites," <u>PNAS</u> , 89:11109-11110 (1992).	
	CN	Berg et al., "The Galvanization of Biology: A Growing Appreciation for the Roles of Zinc," <u>Science</u> , 271:1081-1085 (1996).	
	CO	Berg, J.M., "Letting your fingers do the walking," <u>Nature Biotechnology</u> , 15:323 (1997).	
	CP	Bergqvist et al., "Loss of DNA-binding and new transcriptional <i>trans</i> -activation function in polyomavirus large T-antigen with mutation of zinc finger motif," <u>Nuc. Acids Res.</u> , 18(9):2715-2720 (1990).	
	CQ	Blaese et al., "Vectors in cancer therapy: how will they deliver?," <u>Cancer Gene Therapy</u> , 2(4):291-297 (1995).	
	CR	Caponigro et al., "Transdominant gentic analysis of a growth control pathway," <u>PNAS</u> , 95:7508-7513 (1998)	
	CS	Celenza et al., "A Yeast Gene That Is Essential for Release from Glucose Repression Encodes a Protein Kinase," <u>Science</u> , 233:1175-1180 (1986).	
CT	Cheng et al., "Identification of Potential Target Genes for Adr1p through Characterization of Essential Nucleotides in UAS1," <u>Mol. Cellular Biol.</u> , 14(6):3842-3852 (1994).		
✓	CU	Cheng et al., "A Single Amino Acid substitution in Zinc Finger 2 of Adr1p Changes its Binding Specificity at two Positions in UAS1," <u>J. Mol. Biol.</u> , 251:1-8 (1995)	

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CV	Choo et al., "A role in DNA binding for the linker sequences of the first three zinc fingers of TFIIIA," <u>Nuc. Acids Res.</u> , 21(15):3341-3346 (1993).
CW	Choo et al., "Designing DNA-binding proteins on the surface of filamentous phage," <u>Curr. Opin. Biotechnology</u> , 6:431-436 (1995).
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CY	Choo, Y., "Recognition of DNA methylation by zinc fingers," <u>Nature Struct. Biol.</u> , 5(4):264-265 (1998).
CZ	Choo et al., "All wrapped up," <u>Nature Structural Biology</u> , 5(4):253-255 (1998).
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DG	Corbi, N. et al., "Synthesis of a New Zinc Finger Peptide; Comparison of its 'Code' Deduced and 'CASTing' Derived Binding Sites," <u>FEBS Letters</u> , 417:71-74 (1997).
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DJ	Desjarlais et al., "Length-encoded multiplex binding site determination: Application to zinc finger proteins," <u>PNAS</u> , 91:11099-11103 (1994).
DK	Desjarlais et al., "Use of a zinc-finger consensus sequence framework and specificity rules to design specific DNA binding proteins," <u>PNAS</u> , 90:2256-2260 (1993)
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DM	Desjarlais et al., "Redesigning the DNA-Binding Specificity of a Zinc Finger Protein: A Data Base-Guided Approach," <u>Proteins: Structure, Function, and Genetics</u> , 12(2):101-104 (1992)
DN	DiBello et al., "The Drosophila <i>Broad-Complex</i> Encodes a Family of Related Proteins Containing Zinc Fingers," <u>Genetics</u> , 129:385-397 (1991).
DO	Elrod-Erickson et al., "High-resolution structures of variant Zif268-DNA complexes: implications for understanding zinc finger-DNA recognition," <u>Structure</u> , 6(4):451-464 (1998).
DP	Elrod-Erickson et al., "Zif268 protein-DNA complex refined at 1.6 Å: a model system for understanding zinc finger-DNA interactions," <u>Structure</u> , 4(10):1171-1180 (1996)
DQ	Fairall et al., "The crystal structure of a two zinc-finger peptide reveals an extension to the rules for zinc-finger/DNA recognition," <u>Nature</u> , 366:483-487 (1993)
DR	Frankel et al., "Fingering Too Many Proteins," <u>Cell</u> , 53:675 (1988).
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DT	Friesen et al., "Specific RNA binding proteins constructed from zinc fingers," <u>Nature Structural Biology</u> , 5(7):543-546(1998).

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	DW	Greisman et al., "A General Strategy for Selecting High-Affinity Zinc Finger Proteins for Diverse DNA Target Sites," <u>Science</u> , 275:657-661 (1997)	
	DX	Hamilton et al., "Comparison of the DNA Binding Characteristics of the Related Zinc Finger Proteins WT1 and EGR1," <u>Biochemistry</u> , 37:2051-2058 (1998).	
	DY	Hamilton et al., "High affinity binding sites for the Wilms' tumor suppressor protein WT1," <u>Nuc. Acids Res.</u> , 23(2):277-284 (1995).	
	DZ	Hanas et al., "Internal deletion mutants of <i>Xenopus</i> transcription factor IIIA," <u>Nuc. Acids Res.</u> , 17(23):9861-9870 (1989).	
	EA	Hayes et al., "Locations of Contacts between Individual Zinc Fingers of <i>Xenopus laevis</i> Transcription Factor IIIA and the Internal Control Region of a 5S RNA Gene," <u>Biochemistry</u> , 31:11600-11605 (1992).	
	EB	Heinzel et al., "A complex containing N-CoR, mSin3 and histone deacetylase mediates transcriptional repression," <u>Nature</u> , 387:43-48 (1997).	
	EC	Hirst et al., "Discrimination of DNA response elements for thyroid hormone and estrogen is dependant on dimerization of receptor DNA binding domains," <u>PNAS</u> , 89:5527-5531 (1992).	
	ED	Hoffman et al., "Structures of DNA-binding mutant zinc finger domains: Implications for DNA binding," <u>Protein Science</u> , 2:951-965 (1993).	
	EE	Isalan et al., "Synergy between adjacent zinc fingers in sequence-specific DNA recognition," <u>PNAS</u> , 94(11):5617-5621 (1997)	
	EF	Isalan et al., "Comprehensive DNA Recognition through Concerted Interactions from Adjacent Zinc Fingers," <u>Biochemistry</u> , 37:12026-12033 (1998).	
	EG	Jacobs, G. H., "Determination of the base recognition positions of zinc fingers from sequence analysis," <u>EMBO J.</u> , 11(12):4507-4517 (1992).	
	EH	Jamieson et al., "A zinc finger directory for high-affinity DNA recognition," <u>PNAS</u> , 93:12834-12839 (1996).	
	EI	Jamieson et al., "In Vitro Selection of Zinc Fingers with Altered DNA-Binding Specificity," <u>Biochemistry</u> , 33(19):5689-5695 (1994)	
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	EL	Kang, J.S. et al., "Zinc Finger Proteins as Designer Transcription Factors," <u>J. Biol. Chem.</u> , 275(12):8742-8748 (2000)	
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	EN	Kim et al., "Site-specific cleavage of DNA-RNA hybrids by zinc finger/ <i>FokI</i> cleavage domain fusions," <u>Gene</u> , 203:43-49 (1997).	
	EO	Kim et al., "A 2.2 Å resolution crystal structure of a designed zinc finger protein bound to DNA," <u>Nat. Struct. Biol.</u> , 3(11):940-945 (1996)	
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	ER	Kim et al., "Hybrid restriction enzymes: Zinc finger fusions to <i>Fok I</i> cleavage domain," <u>PNAS</u> , 93:1156-1160 (1996)	

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	EU	Kriwacki et al., "Sequence-specific recognition of DNA by zinc-finger peptides derived from the transcription factor Sp1," <u>PNAS</u> , 89:9759-9763 (1992).	
	EV	Klug, A., "Zinc Finger Peptides for the Regulation of Gene Expression," <u>J. Mol. Biol.</u> , 293:215-218 (1999).	
	EW	Klug, A., "Gene Regulatory Proteins and Their Interaction with DNA," <u>Ann. NY Acad. Sci.</u> , 758:143-160 (1995).	
	EX	Klug et al., "Protein Motifs 5: Zinc Fingers," <u>FASEB J.</u> , 9:597-604 (1995).	
	EY	Kothekar, V., "Computer simulation of zinc finger motifs from cellular nucleic acid binding protein and their interaction with consensus DNA sequences," <u>FEBS Letters</u> , 274(1-2):217-222 (1990).	
	EZ	Kulda et al., "The regulatory gene <i>areA</i> mediating nitrogen metabolite repression in <i>Aspergillus nidulans</i> . Mutations affecting specificity of gene activation alter a loop residue of a putative zinc finger," <u>EMBO J.</u> , 9(5):1355-1364 (1990).	
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	FC	Mandel-Gutfreund et al., "Quantitative parameters for amino acid-base interaction: implications for prediction of protein-DNA binding sites," <u>Nuc. Acids Res.</u> , 26(10):2306-2312 (1998).	
	FD	Margolin et al., "Kruppel-associated boxes are potent transcriptional repression domains," <u>PNAS</u> , 91:4509-4513 (1994).	
	FE	Mizushima et al., "pEF-BOS, a powerful mammalian expression vector," <u>Nuc. Acids Res.</u> , 18(17):5322 (1990).	
	FF	Nakagama et al., "Sequence and Structural Requirements for High-Affinity DNA Binding by the WT1 Gene Product," <u>Molecular and Cellular Biology</u> , 15(3):1489-1498 (1995).	
	FG	Nardelli et al., "Zinc finger-DNA recognition: analysis of base specificity by site-directed mutagenesis," <u>Nuc. Acids Res.</u> , 20(16):4137-4144 (1992)	
	FH	Nardelli et al., "Base sequence discrimination by zinc-finger DNA-binding domains," <u>Nature</u> , 349:175-178 (1991).	
	FI	Nekludova et al., "Distinctive DNA conformation with enlarged major groove is found in Zn-finger—DNA and other protein—DNA complexes," <u>PNAS</u> , 91:6948-6952 (1994)	
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	FM	Pavletich et al., "Crystal Structure of a Five-Finger GLI-DNA Complex: New Perspectives on Zinc Fingers," <u>Science</u> , 261:1701-1707 (1993).	
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	FR	Pomerantz et al., "Structure-Based Design of a Dimeric Zinc Finger Protein," <u>Biochemistry</u> , 37(4):965-970 (1998)	
	FS	Pomerantz et al., "Structure-Based Design of Transcription Factors," <u>Science</u> , 267:93-96 (1995).	
	FT	Pomerantz et al., "Analysis of homeodomain function by structure-based design of a transcription factor," <u>PNAS</u> , 92:9752-9756 (1995)	
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	GA	Reith et al., "Cloning of the major histocompatibility complex class II promoter binding protein affected in a hereditary defect in class II gene regulation," <u>PNAS</u> , 86:4200-4204 (1989).	
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	GC	Rice et al., "Inhibitors of HIV Nucleocapsid Protein Zinc Fingers as Candidates for the Treatment of AIDS," <u>Science</u> , 270:1194-1197 (1995).	
	GD	Rivera et al., "A humanized system for pharmacologic control of gene expression," <u>Nature Medicine</u> , 2(9):1028-1032 (1996)	
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HH	Search of Swissprot database performed on August 2000.	<i>not considered as date of place of publication</i>
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Filing Date	April 2, 2001
First Named Inventor	Eisenberg, Stephen P.
Group Art Unit	1631
Examiner Name	Jeffrey Lundgren, John S. Brusca
Attorney Docket Number	019496-001810US

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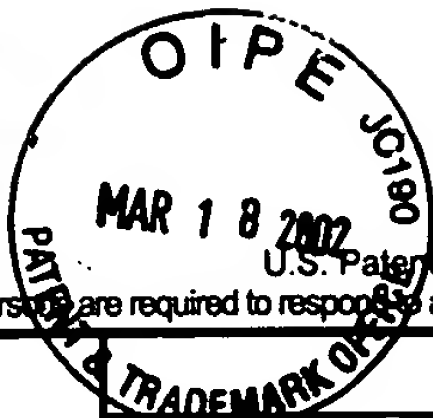
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First Named Inventor Eisenberg, Stephen P.

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Examiner Name Jeffry Lundgren

Attorney Docket Number 019496-001810US

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Examiner Name	Jeffry Lundgren
Attorney Docket Number	019496-001810US

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JLB	AA	BONDE et al., "Ontogeny of the v-erb A Oncoprotein from the Thyroid Hormone Receptor: an Alteration in the DNA Binding Domain Plays a Role Crucial for v-erb A Function," <u>J. Virology</u> , 65(4):2037-2046 (1991).	
JLB	AB	DESJARDINS et al., "Repeated CT Elements Bound by Zinc Finger Proteins Control the Absolute and Relative Activities of the Two Principal Human c-myc Promoters," <u>Mol. and Cellular Biol.</u> , 13(9):5710-5724 (1993).	
JLB	AC	HALL et al., "Functional Interaction between the Two Zinc finger Domains of the v-erb A Oncoprotein," <u>Clee Growth & Differentiation</u> , 3:207-216 (1992).	

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